National Center for Education Statistics
U.S Department of Education
1990 K St., NW
Washington, D.C. 20006

Identification Label

Teacher Name: _____

Class Name: _____

Teacher ID: _____ Teacher Link # _____

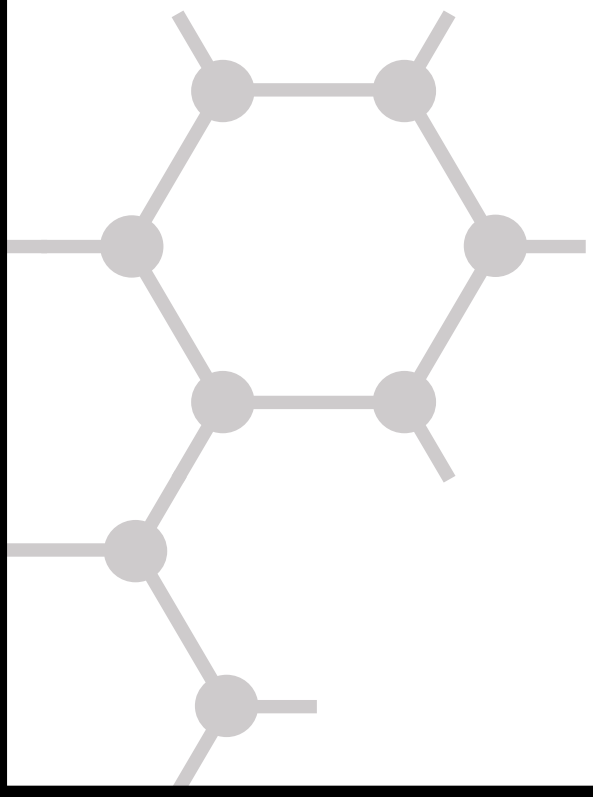
IEA Trends in International Mathematics and Science Study

TIMSS 2003

Main Survey

Teacher Questionnaire

Grade 4



General Directions

Your school has agreed to participate in TIMSS 2003, a large international study of student learning in mathematics and science in more than 50 countries around the world. Sponsored by the International Association for the Evaluation of Educational Achievement (IEA), TIMSS (for Trends in International Mathematics and Science Study) is measuring trends in student achievement and studying differences in national education systems in order to help improve the teaching and learning of mathematics and science worldwide.

As part of the study, students in a nationwide sample of fourth-grade classes in the United States will complete the TIMSS mathematics and science tests. This questionnaire is addressed to teachers who teach mathematics and science to these students, and seeks information about teachers' academic and professional backgrounds, instructional practices, and attitudes toward teaching mathematics and science. As a teacher of the students in one of these sampled classes, your responses to these questions are very important in helping to describe mathematics and science education in the United States.

Some of the questions in this questionnaire refer to teaching mathematics and teaching science to the students participating in TIMSS 2003. If you teach **both** mathematics and science to the students in the class that is listed on the cover of this questionnaire, please complete the entire questionnaire. If you teach **only mathematics** or **only science** to these students, you will be guided to the appropriate sections to complete starting on page 3.

Please identify a time and place where you will be able to complete this questionnaire without being interrupted. Filling out the questionnaire should require no more than 45 minutes. To make it as easy as possible for you to respond, most questions may be answered simply by checking or filling the appropriate circle.

Once you have completed the questionnaire, place it in the return envelope provided and return it to the school coordinator.

Thank you very much for the time and effort you have put into responding to this questionnaire.

Teacher Background Information

To be completed by **all teachers**

1

How old are you?

*Fill in **one** circle only*

- Under 25 ○
- 25–29 ○
- 30–39 ○
- 40–49 ○
- 50–59 ○
- 60 or older ○

2

Are you female or male?

*Fill in **one** circle only*

- Female ○
- Male ○

3

By the end of this school year, how many years will you have been teaching altogether? Do not include teaching as a substitute or student teacher.

_____

*Number of **years** you have taught full time*

_____

*Number of **years** you have taught part time*

4

What is the highest level of formal education you have completed?

*Fill in **one** circle only*

- Did not complete high school ○
- Finished high school ○
- Some vocational/technical education after high school ○
- Some community college, college, or university courses ○
- Completed a bachelor's degree at a college or university ○
- Finished master's degree or higher ○

5

How many years of preservice teacher training did you have (e.g., time spent in a teacher education program such as student teaching or a mentorship)? Please round to the nearest whole number.

*Fill in **one** circle only*

- 0 years ○
- 1 year ○
- 2 years ○
- 3 years ○
- 4 years ○
- 5 years ○
- More than 5 years ○

6

A. During your college or university education, what was your main area(s) of study?

*Fill in **one** circle for each row*

		No	Yes
a)	Mathematics	○	○
b)	Education - Mathematics	○	○
c)	Science	○	○
d)	Education - Science	○	○
e)	Education - Other	○	○
f)	Other	○	○

B. If your main area of study was education, did you have a specialization in any of the following?

*Fill in **one** circle for each row*

		No	Yes
a)	Mathematics	○	○
b)	Science	○	○
c)	Language/reading	○	○
d)	Other subject	○	○

7

What requirements did you have to satisfy in order to become a teacher in grade 4?

*Fill in **one** circle for each row*

		No	Yes
a)	Complete a bachelor's degree	○	○
b)	Complete a probationary period	○	○
c)	Complete a minimum number of education courses	○	○
d)	Complete a minimum number of mathematics courses	○	○
e)	Complete a minimum number of science courses	○	○
f)	Pass a licensing examination	○	○

8

A. Do you have a teaching license or certificate?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question **9** on next page* ➡

B. What type of license or certificate do you hold?

*Fill in **one** circle only*

Regular or standard state certificate or advanced professional certificate ○

Probationary certificate (the initial certificate issued after satisfying all requirements except the completion of a probationary period) ○

Provisional or other type given to persons who are still participating in what the state calls an "alternative certification program" ○

Temporary certificate (requires some additional college coursework and /or student teaching before regular certification can be obtained) ○

Emergency certificate or waiver (issued to persons with insufficient teacher preparation who must complete a regular certification program in order to continue teaching) ○

About Your School

To be completed by **all teachers**

9

How would you characterize each of the following within your school?

*Fill in **one** circle for each row*

	Very low	Low	Medium	High	Very high
a) Teachers' job satisfaction	○	○	○	○	○
b) Teachers' understanding of the school's curricular goals	○	○	○	○	○
c) Teachers' degree of success in implementing the school's curriculum	○	○	○	○	○
d) Teachers' expectations for student achievement	○	○	○	○	○
e) Parental support for student achievement	○	○	○	○	○
f) Parental involvement in school activities	○	○	○	○	○
g) Students' regard for school property	○	○	○	○	○
h) Students' desire to do well in school	○	○	○	○	○

10

Thinking about your school, indicate the extent to which you agree or disagree with each of the following statements about your school.

*Fill in **one** circle for each row*

	Disagree a lot	Disagree	Agree	Agree a lot
a) This school facility (building and grounds) is in need of significant repair	○	○	○	○
b) This school is located in a safe neighborhood	○	○	○	○
c) I feel safe at this school	○	○	○	○
d) This school's security policies and practices are sufficient	○	○	○	○

11

How often do you have the following types of interactions with other teachers?

*Fill in **one** circle for each row*

	Daily or almost daily	1-3 times per week	2 or 3 times per month	Never or almost never
a) Discussions about how to teach a particular concept	○	○	○	○
b) Working on preparing instructional materials	○	○	○	○
c) Visits to another teacher's classroom to observe his/her teaching	○	○	○	○
d) Informal observations of **my** classroom by another teacher	○	○	○	○

About Teaching Mathematics

If you **do not** teach mathematics to students in the class identified on the cover of this questionnaire, **proceed to Question 30.**
If you **do teach** mathematics to students in the class identified on the cover of this questionnaire, please **continue.**

12

Considering your training and experience in both mathematics content and instruction, how ready do you feel you are to teach these topics in the fourth-grade?

*Fill in **one** circle for each row*

	Very ready	Ready	Not ready
A. Number			
a) Adding, subtracting, multiplying and/or dividing with whole numbers	○	○	○
b) Fractions (parts of a whole or a collection, location on a number line)	○	○	○
c) Fractions or decimals represented by words, numbers, or models	○	○	○
d) Adding and subtracting with decimals	○	○	○
B. Patterns, Equations, and Relationships			
a) Patterns of numbers or shapes (extending sequences and finding missing terms)	○	○	○
b) Simple equations	○	○	○
c) Finding a rule for a relationship given some pairs of numbers	○	○	○
C. Measurement			
a) Recognizing and selecting appropriate units to measure length, weight, time, and temperature	○	○	○
b) Estimating and measuring length, area, volume, weight, and time	○	○	○
D. Geometry			
a) Familiar two- and three-dimensional shapes and their properties	○	○	○
b) Congruent triangles (i.e., same shape and size)	○	○	○
c) Relationships between two-dimensional and three-dimensional shapes	○	○	○
d) Translation, reflection, and rotation (shifts, flips, and turns of shapes)	○	○	○
E. Data			
a) Recognizing what various numbers, symbols, and points mean in data displays	○	○	○
b) Displaying data using tables, pictographs, and bar graphs	○	○	○
c) Drawing conclusions from data displays	○	○	○

13

In the past two years, have you participated in professional development in any of the following?

*Fill in **one** circle for each row*

		Yes	No
a)	Mathematics content	○	○
b)	Mathematics pedagogy/instruction	○	○
c)	Mathematics curriculum	○	○
d)	Integrating information technology into mathematics	○	○
e)	Improving students' critical thinking or problem-solving skills	○	○
f)	Mathematics assessment	○	○

Teaching Mathematics to the TIMSS Class

Questions 14–29 refer to the TIMSS class. Remember, "the TIMSS class" is the class that is identified on the cover of this questionnaire and that will be tested as part of TIMSS 2003 in your school.

Mathematics

14

A. How many students are in the TIMSS class for mathematics?

_____

Write in the number of students

B. How many students in Question 14A are in the fourth-grade ?

_____

Write in the number of fourth-grade students

15

How many minutes per week do you teach mathematics to the fourth-grade students in the TIMSS class?

_____

Write in the number of minutes per week

16

A. Do you use a textbook(s) in teaching mathematics to the fourth-grade students in the TIMSS class?

	Yes	No
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **17**

B. How do you use a textbook(s) in teaching mathematics to the fourth-grade students in the TIMSS class?

*Fill in **one** circle only*

As the primary basis for my lessons ○

As a supplementary resource ○

17

In a typical week of mathematics lessons for the fourth-grade students in the TIMSS class, what percentage of time do students spend on each of the following activities?

Write in the percent
The total should add to 100%

a) Reviewing homework _____%

b) Listening to lecture-style presentations _____%

c) Working problems with your guidance _____%

d) Working problems on their own without your guidance _____%

e) Listening to you re-teach and clarify content/procedures _____%

f) Taking tests or quizzes _____%

g) Participating in classroom management tasks not related to the lesson's content/purpose (e.g., interruptions and keeping order) _____%

h) Other student activities _____%

Total 100%

18

Are the fourth-grade students in the TIMSS class permitted to use calculators during mathematics lessons?

*Fill in **one** circle only*

Yes, with unrestricted use ---------- ○

Yes, with restricted use ---------- ○

No, calculators are not permitted ---------- ○

*If **No,** please go to question* **22**

19

How many fourth-grade students in the TIMSS class have calculators available to use during mathematics lessons?

*Fill in **one** circle only*

All ---------- ○

Most ---------- ○

About half ---------- ○

Some ---------- ○

None ---------- ○

20

How often do the fourth-grade students in the TIMSS class use calculators in their mathematics lessons for the following activities?

*Fill in **one** circle for each row*

	Never	Some lessons	About half the lessons	Every or almost every lesson
a) Check answers	○	○	○	○
b) Do routine computations	○	○	○	○
c) Solve complex problems	○	○	○	○
d) Explore number concepts	○	○	○	○

21

How often are the fourth-grade students in the TIMSS class permitted to use calculators during tests or examinations?

*Fill in **one** circle only*

Always ---------- ○

Sometimes ---------- ○

Never ---------- ○

22

A. Do the fourth-grade students in the TIMSS class have computers available to use during their mathematics lessons?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **24**

B. Do any of the computers have access to the Internet?

	No	Yes
*Fill in **one** circle only*	○	○

23

In teaching mathematics to the fourth-grade students in the TIMSS class, how often do you have students use a computer for the following activities?

*Fill in **one** circle for each row*

	Never	Some lessons	About half the lessons	Every or almost every lesson
a) Discover mathematics principles and concepts	○	○	○	○
b) Practice skills and procedures	○	○	○	○
c) Look up ideas and information	○	○	○	○

Mathematics

24

In teaching mathematics to the fourth-grade students in the TIMSS class, how often do you usually ask them to do the following?

*Fill in **one** circle for each row*

	Never	Some lessons	About half the lessons	Every or almost every lesson
a) Practice adding, subtracting, multiplying, and dividing without using a calculator	○	○	○	○
b) Work on fractions and decimals	○	○	○	○
c) Measure things in the classroom and around the school	○	○	○	○
d) Make tables, charts, or graphs	○	○	○	○
e) Learn about shapes such as circles, triangles, rectangles, and cubes	○	○	○	○
f) Write equations for word problems	○	○	○	○
g) Work together in small groups	○	○	○	○
h) Explain their answers	○	○	○	○

25

By the end of this school year, approximately what percentage of teaching time will you have spent during this school year on each of the following mathematics content areas for the fourth-grade students in the TIMSS class?

Write in the percent
The total should add to 100%

a) Number (includes computation with whole numbers, fractions, and decimals) _____%

b) Patterns, Equations, and Relationships (includes sequences of numbers or shapes, simple equations, and finding rules) _____%

c) Measurement (includes recognizing units and using tools) _____%

d) Geometry (includes two- and three- dimensional shapes) _____%

e) Data (includes reading, making, and interpreting tables and graphs) _____%

f) Other, please specify:

_____ _____%

Total 100%

26

The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when the fourth-grade students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year."

*Fill in **one** circle for each row*

		Not yet taught or just introduced	Mostly taught this year	Mostly taught before this year
A. Number				
a)	Whole numbers including place value and ordering	○	○	○
b)	Represent whole numbers using words, diagrams, or symbols	○	○	○
c)	Properties of whole numbers such as odd and even, multiples, or factors	○	○	○
d)	Computation with whole numbers	○	○	○
e)	Estimation with whole numbers	○	○	○
f)	Fractions (parts of a whole or a collection, location on a number line)	○	○	○
g)	Equivalent fractions	○	○	○
h)	Compare and order fractions	○	○	○
i)	Fractions or decimals represented by words, numbers, or models	○	○	○
j)	Adding and subtracting fractions with the same denominator	○	○	○
k)	Adding and subtracting with decimals (tenths and/or hundredths)	○	○	○
l)	Simple proportional reasoning	○	○	○
B. Patterns, Equations, and Relationships				
a)	Patterns of numbers or shapes (extending sequences and finding missing terms)	○	○	○
b)	Equality using equations, areas, volumes, masses/weights	○	○	○
c)	Missing number in an equation (e.g., if 17 + ___ = 29, what number would go in the blank to make the equation true?)	○	○	○
d)	Simple equations	○	○	○
e)	Pairs of numbers following a given rule (e.g., multiply the first number by 3 and add 2 to get the second number)	○	○	○
f)	Finding a rule for a relationship given some pairs of numbers	○	○	○

26 continued

The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when the fourth-grade students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year."

*Fill in **one** circle for each row*

	Not yet taught or just introduced	Mostly taught this year	Mostly taught before this year
C. Measurement			
a) Nonstandard units to measure length, area, volume, and time (e.g., paper clips for length, tiles for area, sugar cubes for volume)	○	○	○
b) Standard units to measure length, area, mass/weight, angle, and time (e.g., kilometers for car trips, centimeters for human height)	○	○	○
c) Conversion factors between standard units (e.g., hours to minutes, grams to kilograms)	○	○	○
d) Instruments to measure length, weight, time, and temperature in problem situations (e.g., rulers and scales)	○	○	○
e) Calculating areas and perimeters of squares	○	○	○
f) Estimating length, area, volume, weight, and time	○	○	○
D. Geometry			
a) Angles greater than, equal to, or less than a right angle (or 90º)	○	○	○
b) Parallel and perpendicular lines	○	○	○
c) Familiar two- and three-dimensional shapes and their properties	○	○	○
d) Congruent triangles (i.e., same shape and size)	○	○	○
e) Similar triangles (i.e., same shape and different size)	○	○	○
f) Points in a plane	○	○	○
g) Relationships between two-dimensional and three-dimensional shapes	○	○	○
h) Informal coordinate systems	○	○	○
i) Symmetry about a line	○	○	○
j) Two-dimensional symmetrical figures	○	○	○
k) Translation, reflection, and rotation (shifts, flips, and turns of shapes)	○	○	○

26 continued

The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when the fourth-grade students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year."

*Fill in **one** circle for each row*

	Not yet taught or just introduced	Mostly taught this year	Mostly taught before this year
E. Data			
a) Recognizing what various numbers, symbols, and points mean in data displays	○	○	○
b) Organizing a set of data by one characteristic (e.g., height, color, age, shape)	○	○	○
c) Reading data directly from tables, pictographs, bar graphs, and pie charts	○	○	○
d) Displaying data using tables, pictographs, and bar graphs	○	○	○
e) Comparing and matching different representations of the same data	○	○	○
f) Characteristics of related data sets (e.g., given data or representations of data on student heights in two classes, identify the class with the shortest/tallest person)	○	○	○
g) Drawing conclusions from data displays	○	○	○

27

Do you assign mathematics homework to the fourth-grade students in the TIMSS class?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question **30** on next page* ➡

28

How often do you usually assign mathematics homework to the fourth-grade students in the TIMSS class?

*Fill in **one** circle only*

- Every or almost every lesson ○
- About half the lessons ○
- Some lessons ○

29

When you assign mathematics homework to the fourth-grade students in the TIMSS class, about how many minutes do you usually assign? (Consider the time it takes an average student in your class to complete the assignment.)

*Fill in **one** circle only*

- Less than 15 minutes ○
- 15-30 minutes ○
- 31-60 minutes ○
- 61-90 minutes ○
- More than 90 minutes ○

About Teaching Science

If you **do not** teach science to the students in the class identified on the cover of this questionnaire, please **STOP HERE.**

If you **do** teach science to the students in the class identified on the cover of this questionnaire, please **continue.**

30

Considering your training and experience in both science content and instruction, how ready do you feel you are to teach these topics in the fourth-grade?

*Fill in **one** circle for each row*

	Very ready	Ready	Not ready
A. Life Science			
a) Major body structures and their functions in humans and other organisms (plant and animals)	○	○	○
b) Reproduction and development in plants and animals (passing on of general characteristics; life cycles of familiar organisms)	○	○	○
c) Physical features, behavior, and survival of organisms living in different environments	○	○	○
d) Relationships in a living community (e.g., simple food chains, predator/prey relationships)	○	○	○
e) Changes in environments (effects of human activity, pollution and its prevention)	○	○	○
f) Human health (e.g., transmission/prevention of communicable diseases, signs of health/illness, diet, exercise)	○	○	○
B. Physical Science			
a) Classification of objects/materials based on physical properties (e.g., mass, shape, volume, color, hardness, texture, heat/electrical conductivity, magnetic attraction)	○	○	○
b) Forming and separating mixtures	○	○	○
c) Chemical and physical changes (e.g., decaying of animal/plant matter, burning, rusting)	○	○	○
d) States of matter (solids, liquids, gases) and differences in their physical properties (shape, volume), including changes in state of water by heating and cooling (melting, freezing, boiling)	○	○	○
e) Common energy sources/forms and their practical uses (e.g., wind, sun, electricity, burning fuel, water wheel, food)	○	○	○
f) Common uses of electricity and electrical circuits	○	○	○
g) Forces that cause objects to move (e.g., gravity, push/pull forces)	○	○	○
C. Earth Science			
a) Features of earth's landscape (e.g., mountains, plains, rivers, deserts)	○	○	○
b) Water on earth (location, types, and movement)	○	○	○
c) Air (composition, proof of its existence, uses, and importance for supporting life)	○	○	○
d) Common features of the earth's landscape (e.g., mountains, plains, rivers, deserts) and relationship to human use (e.g., farming, irrigation, land development)	○	○	○
e) Fossils of animals and plants (age, formation)	○	○	○
f) Earth's solar system (planets, sun, moon)	○	○	○

31

In the past two years, have you participated in professional development in any of the following?

*Fill in **one** circle for each row*

		No	Yes
a)	Science content	○	○
b)	Science pedagogy/instruction	○	○
c)	Science curriculum	○	○
d)	Integrating information technology into science	○	○
e)	Improving students' critical thinking or inquiry skills	○	○
f)	Science assessment	○	○

Teaching Science to the TIMSS Class

Questions 32 - 42 refer to the TIMSS class. Remember, "the TIMSS class" is the class that is identified on the cover of this questionnaire and that will be tested as part of TIMSS 2003 in your school.

32

A. How many students are in the TIMSS class for science?

_____

Write in the number of students

B. How many students in Question 32A are in the fourth-grade ?

_____

Write in the number of fourth-grade students

33

Is science taught mainly as a separate subject (i.e., not integrated with other subjects) to the fourth-grade students in the TIMSS class?

	Yes	No
*Fill in **one** circle only*	○	○

A. If YES...

How many minutes per week do you teach science to the fourth-grade students in the TIMSS class?

_____

Write in the number of minutes per week

B. If NO...

Please estimate the number of minutes per week that you spend on science topics with the fourth-grade students in the TIMSS class.

_____

Write in the number of minutes per week

34

A. Do you use a textbook(s) in teaching science to the fourth-grade students in the TIMSS class?

	Yes	No
*Fill in **one** circle only*	○	○

*If **No**, please go to question **35** on next page* 

B. How do you use a textbook(s) in teaching science to the fourth-grade students in the TIMSS class?

*Fill in **one** circle only*

- As the primary basis for my lessons ○
- As a supplementary resource ○

Science

35

A. Do the fourth-grade students in the TIMSS class have computers available to use when you are teaching science? Do not include calcuators.

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **37**

B. Do any of the computers have access to the Internet?

	No	Yes
*Fill in **one** circle only*	○	○

36

In teaching science to the fourth-grade students in the TIMSS class, how often do you have students use a computer for the following activities?

*Fill in **one** circle for each row*

	Never	Some lessons	About half the lessons	Every or almost every lesson
a) Do scientific procedures or experiments	○	○	○	○
b) Study natural phenomena through simulations	○	○	○	○
c) Practice skills and procedures	○	○	○	○
d) Look up ideas and information	○	○	○	○

37

In teaching science to the fourth-grade students in the TIMSS class, how often do you usually ask them to do the following?

*Fill in **one** circle for each row*

	Never	Some lessons	About half the lessons	Every or almost every lesson
a) Watch me do a science experiment	○	○	○	○
b) Design or plan experiments or investigations	○	○	○	○
c) Do experiments or investigations	○	○	○	○
d) Work together in small groups on experiments or investigations	○	○	○	○
e) Relate what they are learning in science to their daily lives	○	○	○	○
f) Write or give explanations about something they are studying	○	○	○	○
g) Observe something like the weather or a plant growing and write down what they see	○	○	○	○
h) Present their work to the class	○	○	○	○

38

By the end of this school year, approximately what percentage of teaching time will you have spent during this school year on each of the following science content areas for the fourth-grade students in the TIMSS class?

Write in the percent
The total should add to 100%

a) Life science (includes characteristics and cycles of living things, environmental science, and human health) ----------_____%

b) Physical science (includes topics in physics and chemistry) --------_____%

c) Earth science (includes earth's physical features, natural resources, weather, and solar system) ----------_____%

d) Other, please specify:

_____ --------_____%

Total---------- 100%

39

The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when the fourth-grade students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year."

*Fill in **one** circle for each row*

	Not yet taught or just introduced	Mostly taught this year	Mostly taught before this year
A. Life Science			
a) Types, characteristics, and classification of living things	○	○	○
b) Major body structures and their function in humans and other organisms (plants and animals)	○	○	○
c) Bodily actions in response to outside conditions (e.g., heat, cold, danger) and activities (e.g., exercise)	○	○	○
d) The general steps in the life cycle of familiar organisms (e.g., humans, insects, frogs, plants)	○	○	○
e) Plant and animal reproduction (passing on of general characteristics)	○	○	○
f) Physical features, behavior, and survival of plants and animals in different environments	○	○	○
g) Relationships in a living community (e.g., simple food chains using common plants and animals and predator/prey relationships)	○	○	○
h) Changes in environments (effects of human activity, pollution and its prevention)	○	○	○
i) Ways that common communicable diseases (e.g., colds, influenza) are transmitted; signs, prevention, and treatment of illness	○	○	○
j) Ways of maintaining good health, including diet and exercise	○	○	○

Science

39 continued

The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when the fourth-grade students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year."

*Fill in **one** circle for each row*

		Not yet taught or just introduced	Mostly taught this year	Mostly taught before this year
B. Physical Science				
a)	Classification of objects and materials based on physical properties	○	○	○
b)	Properties and uses of metals	○	○	○
c)	Forming and separating mixtures	○	○	○
d)	Properties and uses of water	○	○	○
e)	Chemical and physical changes (e.g., decaying of animal/plant matter, burning, rusting)	○	○	○
f)	States of matter (solids, liquids and gases) and differences in their physical properties in terms of shape and volume	○	○	○
g)	Changes in state of water by heating and cooling (melting, freezing, boiling)	○	○	○
h)	Common energy sources/forms and their practical uses (e.g., wind, sun, electricity, burning fuel, water wheel, food)	○	○	○
i)	Heat flow and temperature	○	○	○
j)	Common sources of light and related phenomena (e.g., formation of rainbows and shadows, visibility of objects, mirrors, colors)	○	○	○
k)	Common uses of electricity and electrical circuits	○	○	○
l)	Magnets (north and south poles, magnetic attraction and repulsion)	○	○	○
m)	Forces that cause objects to move (e.g., gravity, push/pull forces)	○	○	○

39 continued

The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when the fourth-grade students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year."

*Fill in **one** circle for each row*

	Not yet taught or just introduced	Mostly taught this year	Mostly taught before this year
C. Earth Science			
a) Rocks, minerals, sand, and soil	○	○	○
b) Water on earth (location, types, and movement)	○	○	○
c) Air (composition, proof of its existence, uses, and importance for supporting life)	○	○	○
d) Common features of the earth's landscape (e.g., mountains, plains, rivers, deserts) and relationship to human use (e.g., farming, irrigation, land development)	○	○	○
e) Use and conservation of earth's natural resources	○	○	○
f) Earth's water cycle (water flowing in rivers from mountains to sea, cloud formation and precipitation)	○	○	○
g) Weather conditions from day to day or over the seasons	○	○	○
h) Fossils of animals and plants (age, formation)	○	○	○
i) Earth's solar system (planets, sun, moon)	○	○	○

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Do you assign science homework to the fourth-grade students in the TIMSS class?

	Yes	No
*Fill in **one** circle only*	○	○

*If **No**, you have completed the questionnaire* ●

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How often do you usually assign science homework to the fourth-grade students in the TIMSS class?

*Fill in **one** circle only*

- Every or almost every lesson ○
- About half the lessons ○
- Some lessons ○

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When you assign science homework to the fourth-grade students in the TIMSS class, about how many minutes do you usually assign? (Consider the time it takes an average student in your class to complete the assignment.)

*Fill in **one** circle only*

- Fewer than 15 minutes ○
- 15-30 minutes ○
- 31-60 minutes ○
- 61-90 minutes ○
- More than 90 minutes ○

Thank You

for completing this questionnaire

TIMSS International Study Center
Boston College
Chestnut Hill, MA 02467